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ANALYSIS OF THE HERPETOFAUNA OF BAJA CALIFORNIA, MEXICO

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I. INTRODUCTION

This study is the first of a series concerning the biogeography and systematics of the herpetofauna of Baja California, Mexico, and adjacent islands. Field work in this connection was begun at the close of World War II. In the summer of 1949, studies in Baja California were extended to the Cape San Lucas region, from sea level to the 7,000 foot crest of the Sierra Laguna. At this writing, work is continuing, both in the laboratory and field.

The patterns of ecologic and geographic distribution shown by the reptiles and amphibians of Baja California and adjacent regions can be correlated with the recently defined history of Tertiary environments of Western North America. This environmental history has been illuminated largely through advances in the field of paleobotany during the last decade. We propose to define the variation and ecologic distribution of the amphibians and reptiles of the peninsula and adjacent islands as well as available material well permit and to attempt the correlation of distribution patterns with the environmental history.

Among the new forms which have come to light in the course of our field work is a new northern coastal subspecies of *Crotalus enyo*, the Baja California Rattlesnake. This form is described, its ecology discussed, and pertinent new scale terminology is proposed.

II. ANALYSIS OF SUBSPECIFIC DIFFERENTIATION IN CROTALUS ENYO, THE BAJA CALIFORNIA RATTLESNAKE

Scale Terminology

There is, as yet, no adequate terminology for the somewhat irregular scales on the side of the head of *Crotalus*. *C. enyo* is not unique in having small scales present in three areas on the side of the head: (1) bordering the upper loreal, (2) at the upper anterior corner of the eye, and (3) about the loreal pit. Current problems relative to these scales have been obscured by the lack of an accepted precise terminology. This problem has been discussed with Laurence M. Klauber, and the new names for scales as used herein are the result of our mutual agreements (see Klauber, 1952:9, footnote).

Fig. 1. Distribution of the subspecies of *Crotalus enyo,* the Baja California Rattlesnake.

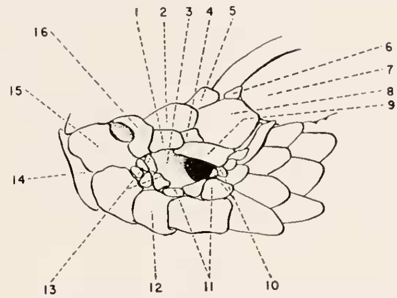

Fig. 2. Scales on the anterior lateral surface of the head of *Crotalus,* as exemplified by *C. enyo.* 1, lower loreal (subloreal); 2, upper loreal (supraloreal); 3, lacunal; 4, postloreal; 5, postsupraloreal; 6, preciliary; 7, orbit; 8, upper preocular; 9, lower preocular; 10, postfoveals; 11, subfoveals; 12, second supralabial; 13, prefoveals, (there are five in this example, as usual, they occupy a triangular area); 14, rostral; 15, prenasal; 16, postnasal.

The following terms for head scalation are suggested (see Fig. 2):

(1) *prefoveal(s), subfoveal(s),* and *postfoveal(s),* for the small scales at the anterior, lower, and posterior borders of the pit. The scales lining the pit (and small extensions of these scales along its outer border) are termed *lacunals* (see below). Two of these terms (subfoveal and postfoveal) are restricted in the sense that they apply only to *the border row of scales about the pit* (Fig. 2). The prefoveals comprise all small scales in the small area anterior to the subfoveals which are bordered by the following scales: supralabial(s), subfoveal, lacunal, loreal or lower loreal, and nasal. Where prefoveals and subfoveals are to be distinguished on the one hand, and postfoveals and subfoveals on the other, is a matter of reference to a line drawn at 45 degrees to the horizontal, through the center of the pit. This is analogous to the situation in segregating suboculars and postoculars. The term prefoveal may prove to be the most useful of the three; the terms subfoveal and postfoveal may be used where they clarify description, as in *C. enyo.*

(2) *lacunal(s),* for the relatively large scale(s) forming the inner border of the pit. These scales are reduced in size when foveal scales, particularly subfoveals, are present.

(3) *preciliary(s),* for the small scale in the upper anterior corner of the eye. This scale is just below the contact of the postsupraloreal and the supraocular and is a derivative from the upper preocular scale, that is split off of its upper posterior corner. It is not consistently present in *C. enyo.* The postsupraloreal is more consistently present.

(4) *presupraloreal(s)* and *postsupraloreal(s),* for the small scales which may border the supraloreal and which are, for the most part, below the canthus. Such distinction is useful in some species, including *C. enyo,* but becomes arbitrary and confusing in others, such as *C. molossus,* that have numerous scales in the loreal region. The *presupraloreal(s)* is anterior to the upper loreal (=supraloreal), between that scale and the postnasal. The *postsupraloreal(s)* is located posterior to the upper loreal, between it and the supraocular; it is anterior to, and slightly above, the preciliary, when that scale is developed. These scales are present in a few

species including *C. enyo* which characteristically has a single postsupraloreal but lacks a presupraloreal.

(5) *postloreal(s),* for the small irregularly occurring scale(s) interposed between the loreal(s) and preocular(s), as in *C. enyo.* By use of the proposed terms "postloreal" and "preciliary" in forms like *C. enyo,* there is no disturbance of the usual nomenclatorial designations of the regular upper and lower preoculars and upper and lower loreals. This distinction also is less applicable to forms, like *C. molossus,* that have numerous loreals.

Crotalus enyo furvus, subsp. nov.[1]

Dusky Baja California Rattlesnake

Holotype.—Adult male, No. 55388, Museum of Vertebrate Zoology, collected alive by Kenneth S. Norris and Charles H. Lowe, Jr., July 21, 1949, 10.9 miles (by road) north of El Rosario, along the main road on the coastwise terrace near the foot of a bold Cretaceous escarpment, Baja California Norte, Mexico. The type is deposited in the Museum of Vertebrate Zoology, University of California, Berkeley, California. (Fig. 3).

Diagnosis.—A distinctive subspecies distinguished from the pallid *C. e. enyo* by a very dark brown ground color and darker blotches and spotting; proximal rattle segment black; 10-12 (11.0) posterior body crossbands; the lacunal(s) wholly or partly separated, by 1-3 subfoveals, from the supralabial row; 3 scales (average) in minimum count between orbit and supralabials.

Measurements (taken on the fresh specimen) and scalation of holotype.—Snout-vent length, 606 mm.; tail length, 60 mm.; ratio of tail to total length, .090; head length, 30.6 mm., contained 21.8 times in overall length; head width, 21.7 mm.; ratio of head length to head width, 1.41.

Scale rows, 25-25-21, with 11 at middle of tail; scales are strongly keeled, with first and occasionally second rows smooth on anterior and middle body, with all rows keeled an extreme posterior body and tail. Ventrals, 162; subcaudals, 29, of which the last 4 are divided. Anal entire. Supralabials, 13—13; infralabials, 13—14. First infralabials undivided; first two in contact with genials on either side; mental triangular; neither intergenials nor submentals present. Rostral wider than high and in contact with supralabials. Internasals, 2. Minimum scale rows between supraoculars, 5. Nasals, 2–2. Loreals, 2, of approximately the same size, or larger than, upper. A postsupraloreal scale between supraocular and supraloreal. A single postloreal scale. Canthals, 3. Preoculars, 2, with suprapreocular larger. A preciliary scale in the upper anterior corner of eye. Minimum scale rows from supralabials to orbit, 3. Total scales in orbit, 9. Prefoveals, 6-4, subfoveals, 3-3, and postfoveals, 2-2, forming a complete row separating the supralabials from the lacunal on the outer margin of the pit floor. Rattle with 14 segments, broken near former tip.

[1] The name (*L. furvus,* dark) refers to the dark or dusky coloration of this race.

Coloration of holotype (in life).—The principal ground color of the upper surfaces is dark brown (Pl. 15, near C 6)[2] on the middle third of the body. Anteriorly, the ground color is slightly darker. Posteriorly, the ground color gradually lightens to tan (14, H 8) just anterior to the vent. Everywhere the ground color is somewhat darker than the primary dorsal row, or series, of blotches, which are rich brown (15, A 12) and are edged with black. The blotch outlines do not adhere to scale rows. The black-edging scales and black scales elsewhere are often tipped with gray (29, A 1). The dorsal blotches of the primary series gradually change backward from longitudinal rectangles on the neck through hexagons and crude diamonds to crossbands on the posterior body and tail. Dorsally, the brownish posterior body crossbands (15, L 12) are faintly edged with dark brown to black; laterally, they are darker brown (15, A 17). A secondary series of smaller blotches, on the lower lateral surface, parallels the primary series. These are variously positioned on the first six scale rows. On the posterior body, they coalesce with the dorsal series to form the afore-mentioned crossbands. Anteriorly, however, they are well separated from the dorsal blotches; the first 5 or 6 on the neck are brown, bordered with black as in the dorsal primary series. Farther back, they take the form of small black spots, involving 2 to 5 scales, until they coalesce with the primary series where they are brown. Still smaller and lighter spots on the first 3 scale rows form a tertiary series and alternate with the elements of the secondary series. They vary in color from black to brown (anterioposteriorly). Faint traces of other blotches, appearing as slight darkenings of the ground color, occur above the tertiary spots on the mid-lateral surfaces, alternate with the spots of the primary and secondary series. These faint blotches in the adult may be traces of more prominent juvenile markings which fade in ontogeny.

The ground color of the upper surfaces of the head posterior to the eyes is the same as that of the neck and anterior body. On the anterior portions, the ground color is an even darker brown. A pair of parallel longitudinal marks begins at the dark brown (8, J 10) supraoculars and continues posteriorly onto the neck, where they become confluent just anterior to the first dorsal blotch. They do not join with this blotch. The brown color (15, A 1) and black bordering of these marks is approximately the same as that of the dorsal blotches. A darker lateral head stripe of rich olive brown (15, H 7), stippled with blackish brown and faintly bordered with black, arises at the ventroposterior corner of the eye, passes backward above the commissure and turns below it posteriorly. No preocular light line is present. A light tan (12, C 5) supraocular cross mark on the anterior half of this scale widens mesially, curving both forward and inward from the outer edge.

The color and pattern of the proximal two-thirds of the tail approximates that of the extreme posterior body. There are 5 light brown crossbands on the tail. The distal third of the tail is a uniform dark blackish brown. The proximal rattle segment is solid black; the second segment

[2] Maerz and Paul (1930) color determinations.

is black tinged slightly with brown. The remaining segments are light brown.

Ventral coloration at mid-body is yellowish (10, C 2 to 10, E 2), with light brown stippling, becoming lighter anteriorly and evenly grading to white on the neck and ventral surface of the head. The mental and first 4 infralabials are a darker blackish brown than the remaining infralabials. The genials and other ventral scales of the anterior portion of the head scales are stippled with light brown over the white ground color. Occasional brown stippling occurs on the remainder of the gular area. The color of the iris is light brown (13, C 5).

Intrasubspecific and *intersubspecific variation.*—Individual differences are slight in the 4 available specimens of *C. e. furvus*. Certain of these differences are set forth in Table 1, in which comparison is also made with *C. e. enyo*. The largest specimen of *furvus,* a badly damaged male DOR (KSN 1337), measures approximately 580 mm. from snout to vent.

Like many other immature rattlesnakes, a female of *e. furvus* (LMK 41087), studied shortly after preservation in alcohol, was found to be lighter in ground color and bolder in pattern. The mediolateral blotches that alternate with those of the primary and secondary series are clearly marked and less obscured than in the adult. These marks are absent from the neck and posterior quarter of the body in the immature. In color they are darker brown than the ground color and partly edged with black in the same manner as the dorsal primary series of blotches. In this small specimen there are two prominent black spots on each infralabial row; one is on the third infralabial scale, and the other, of approximately the same size, borders the ninth and tenth infralabials. The dorsal head marks of this specimen are unlike the type and more like *e. enyo* in being broken at the middle of the head and not confluent posteriorly. In addition, this specimen does not have a preciliary scale, and in contrast to the remainder of the topotypic series, the upper and lower loreals are of approximately the same size on one side, but with the upper still slightly larger on the other side. Nevertheless, it appears that a difference in the size of the loreals may prove to be another diagnostic scale difference between *e. enyo* and *e. furvus.*

In *e. enyo.* the third and fourth supralabials are often in contact with the lacunal scale. In *e. furvus.* the supralabials are completely or nearly completely separated from the lacunal(s) by one or more small foveals (see Fig. 2). Many of these small scales (particularly the subfoveals), when present, are developed at the expense of the material which would otherwise form a larger lacunal scale(s).

When a larger series of *e. furvus* is available, the following characters may prove to be clinal: the number and relative size of canthals, relative size of the upper and lower loreals, number of scales between supralabials and orbit, number of scales in orbit, number of prefoveals and subfoveals, and number of infralabials in contact with genials. The geographic differences in color (Table 2) may intergrade sharply, in step-cline fashion. The color features of both *e. furvus* and *e. enyo* appear to be correlated with color features of their habitats. The known ranges of the subspecies of *C. enyo* (Fig. 1) are separated by about 60 miles and no intergrades have yet been taken. The northernmost specimens of *e. enyo* were collected by L. M. Huey in 1930 from Jaraguay and from near Cataviña (Klauber, 1931). These two northerly specimens of *e. enyo* extended the known range of the species about 270 miles north of the northernmost previously known record, at Mulegé. The type specimen of *e. furvus*, collected near El Rosario in 1949, again extended the known range of the species an additional jump to the north—in this case 60 miles, nearly 20 years later and in a relatively well traversed area of Baja California. The third specimen of *e. furvus*, from Punta Camalú, extended the range northward an additional 45 miles; the fourth specimen slightly farther. With additional collecting, the present gaps will almost certainly narrow, and intergrades between the two subspecies may be expected. The new form is accorded subspecific status because the discovery of intergradation is anticipated and because, even though geographic intergrades are not discovered or do not exist, the differences will not prove sufficiently consistent to warrant specific separation. The differences, furthermore, appear to represent the low level of morphological difference usually associated with subspecific differentiation.

Locality Records.—In addition to the type, 3 specimens (paratypes) of *C. e. furvus* are available. These are (1) an immature female, LMK 41087, collected (LOR) by Charles E. Shaw and Richard Schwenkmeyer, April 2, 1950, 2 miles north of El Rosario, near the type locality; (2) an adult male, KSN 1337, collected (DOR) by Kenneth S. Norris, August 30, 1951, at Punta Camalú; and (3) an immature female, KSN 1454, collected (DOR) by K. S. Norris and Arthur Lockley, May 24, 1952, 9.5 miles south of San Telmo River valley (on main road), all in Baja California Norte, Mexico.

The localities at which *C. enyo* has been collected are the following:[3]

CROTALUS ENYO ENYO

Southern Cape Region, Baja California, Mexico

- Cape San Lucas (type locality)
- La Paz
- San José del Cabo
- San Bartolo
- Miraflores
- 6 miles south of Miraflores
- Santa Anita
- San Antonio
- Sierra de la Laguna, opposite Todos Santos
- San Pedro
- Todos Santos
- Sierra de la Laguna
- La Rivera
- Eureka
- San Pedro Mountains

[3] Localities are from published data (Klauber, 1931; Gloyd, 1940), from Klauber (*in litt.*), and localities recorded during our studies to date.

Central Baja California Region
- Mulegé
- San Ignacio
- 29 miles south of Punta Prieta
- Almejas Bay, Santa Margarita Island
- Los Angeles Bay
- 10 miles west of Los Angeles Bay
- 2 miles south of Los Angeles Corral
- 1.6 miles west of San Ignacio

Northern Baja California Region
- Jaraguay
- 10 miles north of Cataviña

Gulf of California Islands
- Isla Partida
- San Francisco Island
- Carmen Island

CROTALUS ENYO FURVUS

Northern Baja California Region
- 10.9 miles north of El Rosario, along main road (type locality)
- 2 miles north of El Rosario, along main road
- Punta Camalú
- 9.5 miles south of San Telmo River valley, along main road

Ecology and Distribution.—The area from which the four specimens of *C. enyo furvus* have been taken is relatively limited in extent. This is the coastal strip from 2 miles north of El Rosario northward to Punta Camalú, 65 miles north of El Rosario. Almost certainly this does not represent the total range of the animal. The plant associations and climatic conditions typical of the localities at which the snake has been found to date extend both north and south of the present known localities. A tentative and conservative estimate of the probable range of the subspecies, the evidence for which is discussed below, is the western coastal area of northern Baja California from Punta San Antonio (or possibly Punta Canoas farther to the south) northward to Cabo Colnett. This range includes the townsites of El Rosario and San Quintín.

At San Quintín, in 1949 and prior to the finding of the Camalú (northernmost) specimen, the authors and Mrs. Lowe were the guests of Mr. Frank Frymier, a resident American farming on the flat plain. He described two kinds of rattlesnakes from the plain, a large red one (obviously *C. r. ruber*) and a smaller "gray" one *(C. enyo furvus)*. Both were adequately described from his firsthand knowledge of the snakes. (The Camalú and near San Telmo River valley specimens, more recently collected, confirm our opinion that *C. enyo furvus* is an inhabitant of the San Quintín area and northward.) Mr. Frymier said that many of the small gray rattlesnakes were killed during brush clearing operations. A large drag was pulled over the brush, rolling it away from the ground. He stated the red snake and the smaller "gray" one were present in about equal numbers. When shown living *C. r. ruber* and *C. enyo furvus*, he identified them as being the two rattlesnakes present on the plain.

The San Quintín Plain extends for several miles along the coast. Beyond the plain to the north, to a few miles north of Punta Cabras which is north of Cabo Colnett, and to the south at least to Punta San Antonio (south of El Rosario), there is a continuation of the same open, low-growing scrubby vegetation on the coastly terraces. South of El Rosario, the coast rises more abruptly to foothills than it does to the north. Similarly, north of Punta Cabras the country is rugged and mountainous along the coast, with narrow coastal shelves and numerous high sea cliffs. Rather marked environmental changes occur over relatively short distances to the northward, eastward, and southward of the coastal area just described. *C. e. furvus* may also occur on the higher coastal terraces back of the San Quintín Plain.

At the type locality (Fig. 3B), 10.9 miles north of Rosario (along the main road), which is south and slightly higher in elevation than the San Quintín Plain, the habitat is a marine terrace extending inland from sea bluffs to nearby low hills. The area is covered by low shrubby vegetation. *Euphorbia misera* is a conspicuous plant. It is common both to the north and south along the coastal plains and terraces. *Agave* and *Opuntia* are conspicuous but less common.

It is of interest to note that the extreme latitudinal range of the endemic *Crotalus enyo* from Cape San Lucas northward is nearly within that of the giant cactus, *Cereus pringlei*, the "Cardón" or "Cardón Grande." The northernmost Cardóns occur in the vicinity of Hamilton Ranch and on the San Quintín Plain. Another conspicuous cactus, the Senita (*Cereus schottii*), reaches its northern limit in Baja California in this general vicinity.

At San Quintín, average rainfall is approximately 5 inches annually, and increases northward to approximately 9 inches at Ensenada (Beal, 1948). Southward, rainfall decreases rapidly, though coastal fogs are of common occurrence on the Vizcaíno Desert and farther south. The terraces and plains in the general vicinity of San Quintín and El Rosario are areas characterized by a markedly more mesic climate and biota than the harsh environments both southward and in the interior.

As has been pointed out, the manner in which the two subspecies of *C. enyo* differ most conspicuously is in the degree of difference in amount of melanin. *C. enyo enyo* is light colored, and *C. enyo furvus* is dark colored. The darker form occurs on darker soils and in an environment of higher moisture levels and less extreme diurnal and seasonal temperature fluctuation. All these factors are in contrast with those in the habitat of *C. enyo enyo*.

Little has been recorded of the behavior of *C. enyo*. Klauber (1931) states: "Both island specimens (San Francisco and Carmen Islands) contained mammal remains, and observations on captive specimens and character of the eye are indicative of largely nocturnal habits. A specimen 608 mm. in length collected March 22, contained eggs."

The type was captured by tracking it at noonday to the mouth of a small rodent burrow where the snake was found resting with part of its coils in the sunlight. When first observed, it remained motionless and did not rattle. It blended perfectly with the dark soil background and would not have been seen at all had not its track betrayed its presence. The snake was not extremely vicious, nor was it as docile as are most individuals of *C. r. ruber* upon capture.

A specimen of *C. enyo enyo,* captured alive 1.6 miles west of San Ignacio, was very difficult to see lying across the rocky road. Its light background color, matching effectively, concealed the animal. When this specimen was shown to Mexicans at San Ignacio, they told us it was most commonly found in rocky areas. *C. enyo,* in this more southerly area, appears to occupy a markedly different microenvironment than does *C. e. furvus* to the north. On June 21, 1949, at dusk, the following temperatures were recorded for the adult specimen from near San Ignacio: cloacal temperature, 29.7°C.; air temperature (1 cm. above the ground), 27.5°C.; soil surface, 32.1°C.

Acknowledgments

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Drs. Howard K. Gloyd, Laurence M. Klauber, and Carl L. Hubbs have read manuscript and gave many helpful suggestions that have been incorporated. Fig. 2 was drawn by Mr. Donald B. Sayner of the University of Arizona.

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TABLE 1

INTRASUBSPECIFIC AND INTERSUBSPECIFIC VARIATION IN *Crotalus enyo*

Subspecies	*furvus*				*enyo*
	ad. ♂ Type MVZ 55388	ad. ♂ KSN 1337	imm. ♀ KSN 1454	imm. ♀ LMK 41087	Klauber (1931)
Snout-vent length, mm.	606	643	410	457	......
Total length, mm.	666	711	436	486	......
Tail length, mm.	60	68	26	29	......
Head length, mm.	30.6	31.0	23.4	25.2	......
Head width, mm.	21.7	......	17.6	17.6	......
Ratio, tail length to total length	.090	.096	.060	.060	Ave. .090(♂), .065(♀)
Ratio, total length to head length	21.8	22.9	16.3	19.3	22.5 - 25.8(23.8)
Ratio, head length to head width	1.41	......	1.89	1.43	Ave., 1.52
Ground color	dark (browns)	dark (browns)	dark (browns)	dark (browns)	light (grays)
Percentage of specimens having paired dorsal head marks engaging first dorsal blotch	0	0	0	0	ca. 50
Body blotches	37	36	42	42	30 - 42
Crossbands on posterior body	10	10	12	12	9*, 7*
Crossbands on tail	5	6	5	4	♂, 5-8(6.2) ♀, 4-5(4.3)
Scale rows at mid-body	25	25	25	25	25
Ventrals	162	inj.	170	171	♀, 165-177(170) ♂, 160-167(164)
Subcaudals	29	27	18	20	♀, 18-22(19.3) ♂, 22-28(25.1)
Supralabials	13-13	13-13	14-13	14-14	12-15(13.4)

Table 1 (Continued)

Infralabials	13-14	14-14	14-15	14-14	12-15(13.6)
Infralabials in contact with genials on either side	2	3	2	3	3, rarely 2
Internasals	2	2	2	2	2
Canthals	3	3	2	3	1-3 (2)
Minimum scale rows between supraoculars	5	6	5	4	2-6 (4.2)
Upper loreal larger than or approximately same size as lower	Yes	Yes	Yes	Yes, one side only	larger, 1 equal, 4 smaller, 22
Preciliary	Present	Present	Absent	Absent	Usually absent
Total scales in orbit	9	10	8	8	Ave., 9.7
Prefoveals	6-4	-5	5-6	7-7	5-5* 5-5*
Subfoveals	3-3	-3	1-1	2-3	0-0* 0-0*
Minimum scales, supralabials to orbit	3	3	3	3	2-3(2.1)

Data on *C. e. enyo* as given by Klauber (1931), except as indicated by asterisks; asterisks indicate characters for which data are not given by Klauber, but supplied by us for two specimens of *C. e. enyo* from vicinity San Ignacio and vicinity La Paz, respectively. KSN 1337 (male) is a damaged specimen (DOR), making certain accurate measurements and counts unobtainable. Abbreviations are as follows: MVZ, Museum of Vertebrate Zoology, University of California, Berkeley, California; LMK, Collection of Laurence M. Klauber, San Diego, California; KSN, Kenneth S. Norris, field catalogue, specimens deposited in the Lowe-Norris Baja California, Mexico, collection.

TABLE 2

COLORS OF REPRESENTATIVE SPECIMENS OF THE SUBSPECIES OF *Crotalus enyo*

	furvus	*enyo*
Recorded on live specimens in the field, in June and July, 1949, according to our notations by Maerz and Paul (1930).	Type, ad. ♂ SV, 606 mm.	San Ignacio, ad. ♂ SV, 553 mm.
Ground color of upper surfaces, middle body third	brown (near 15, C 6)	gray (12, A 1) and pink (9, C 6)
Ground color of upper surfaces, posterior tail third	blackish brown	grayish green (14, J 4)
Ground color at mid-venter	darker yellow (10, C 2 to E 2)	lighter yellow (9, D 1)
Color of mid-dorsal blotch centers	darker brown (15, A 12)	lighter brown (14, K 7)
Color of lateral head stripe	olive brown (15, H 7)	brown (15, C 5)
Color on mental, infralabials, and genials	brown to blackish brown	white to light gray
Color of iris	light brown (13, C 5)	grayish pink (6, B 7)
Color of proximal rattle segment	black	blackish brown, streaked with grayish green

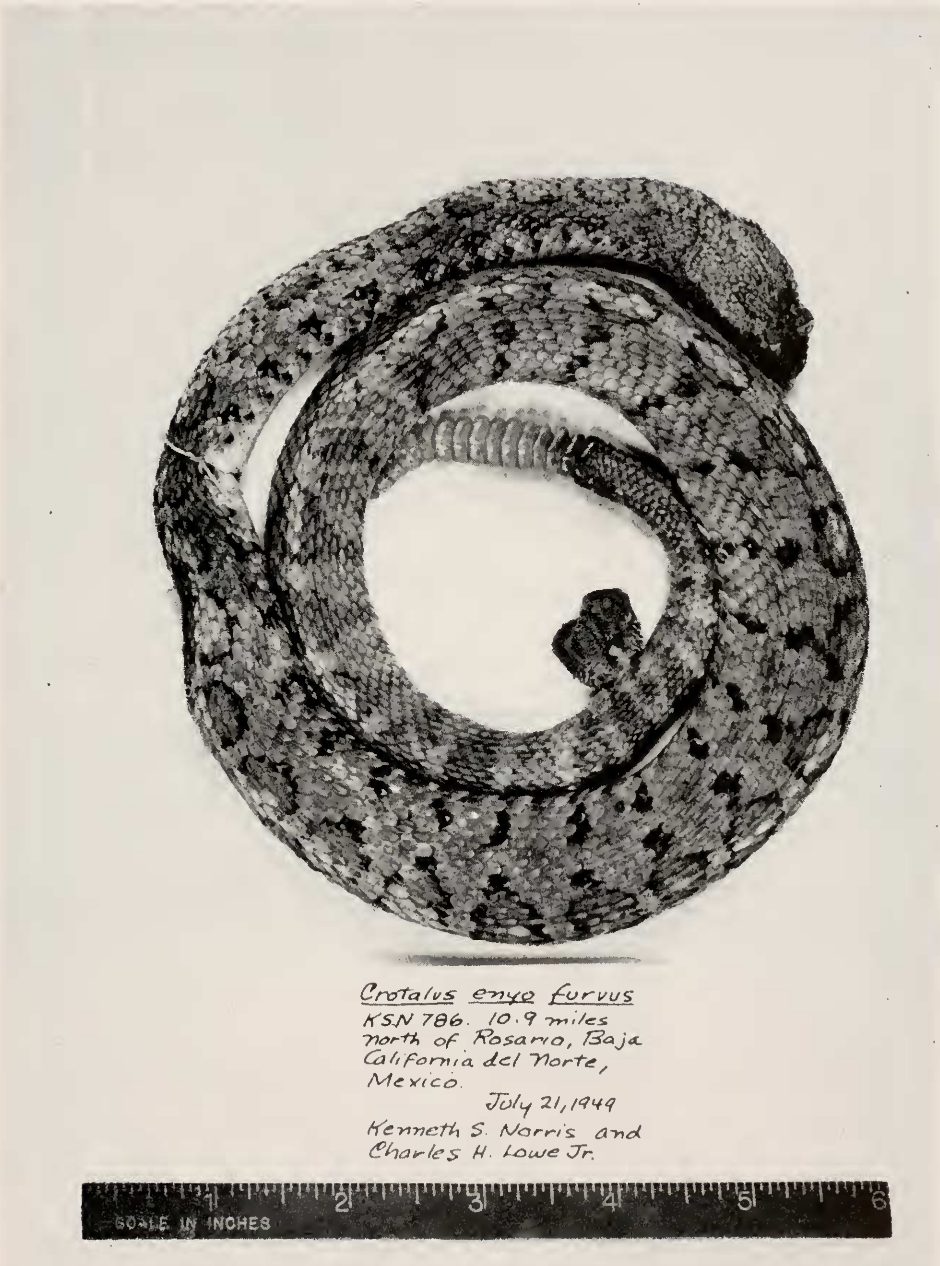

Plate 4. Type specimen of *Crotalus enyo furvus*.

Plate 5. Type locality of *C. e. furvus*, 10.9 miles north of El Rosario, along main road, Baja California Norte, Mexico. From low coastal terrace, looking inland toward escarpment of higher terrace, with eroding ledges of Cretaceous bed.